

10/696,344  
200315617-1

6

REMARKS

Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action, dated September 28, 2007.

In the Office Action of September 28, 2007, the following actions were taken:

(1) Claims 1-2, 4-7, 8-12, and 27-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Pat. No. 63-061065 (hereinafter "Pentel") in view of U.S. Pub. No. 2003/0226474 (hereinafter "Mammen");

(2) Claims 3 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pentel in view of Mammen and further in view of U.S. Pat. No. 5,279,652 (hereinafter "Kaufmann");

(3) Claims 13-18 and 29-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mammen in view of Pentel and Kaufmann; and

(4) Claims 19-26 and 31-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mammen in view of Pentel and Kaufmann.

It is respectfully submitted that the presently pending claims be allowed based on the remarks below.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 1-32 U.S.C. § 103(a) as being unpatentable over several references.

The Applicant does not deem it necessary to recite the entire case law standard required in order to establish a *prima facie* case of obviousness. However, Applicant, would like to briefly remind the Examiner of the required three criteria for a *prima facie* case of obviousness, namely that the asserted references as modified or combined must: 1) teach or suggest each and every element of the claimed invention; 2) provide sufficient motivation for the modification or combination asserted; and 3) provide a sufficient likelihood of successfully making the modification or combination. Nothing in the recent *KSR* Supreme Court case changes this basic analysis.

10/696,344  
200315617-1

With the above background in mind, the Applicant contends that a *prima facie* case of obviousness with respect to pending claims has not been established. Specifically, the references do not provide each and every element of the present claim set and/or sufficient teachings in order to arrive at Applicant's claimed invention. Further, Applicant contends that the combination of references is based on hindsight. Therefore, without knowledge of the disclosure of the present invention, one of ordinary skill in the art would not be able to make the combinations proposed to arrive at the claimed invention.

Emphasis on the independent claims is provided herein, as the Applicant asserts that these claims are all patentably distinct over the prior art. Specifically, the Examiner has rejected claims 1-32 as being obvious in view various combinations of prior art, each of which includes at least two of the following references: Pentel, Mammen, and Kaufmann. Thus, a brief discussion these references are believed to be in order.

#### *Pentel*

The Examiner references a highlighter ink composition from the Pentel abstract. The Pentel abstract (English translation) suggests that the purpose of the composition is to keep a highlighter pen tip "slightly drying" "even if the cap is kept removed for a long time." (see Abstract). The abstract does not disclose any purpose or intent that the invention was to reduce smearing of highlighted images, nor does it provide any results or teachings that it would indicate reduction of smear. The Examiner references the composition as containing a) a coloring material; b) an organic solvent; and c) an acid compound (including ascorbic acid). However, Pentel does not appear to disclose the use of a highlighter colorant that is an acid-functionalized pigment or a fluorescent colorant as required by the present invention. Additionally, even though Pentel discloses the compound "ascorbic acid," Pentel does not use this compound as an acid buffer.

#### *Mammen*

Mammen teaches a smear-resistant ink composition comprising water, a glycol, a pyrrolidone, and a colorant that produces a detectable fluorescent color. See Abstract. Mammen teaches that "the ink composition can further comprise a basic color stabilizer to adjust the pH and keep the pH relatively alkaline range in order to ensure that the dyes used retain their color." See [0102]. Therefore, Mammen does not utilize an acid buffer as described and claimed by the Applicant.

10/696,344  
200315617-1

*Kaufmann*

Kaufmann teaches the addition of an anti-blocking additive to a marking fluid to keep the marker tip from drying out. See abstract. Specifically, Kaufmann claims its invention is "directed to the use of solids as anti-blocking additives in common marking fluids . . . to provide a protecting and the evaporation hindering closure of the open, unprotected and unused capillary outlet opening." See col. 1, lines 9-14. Kaufmann defines the problem as "the capillary opening" becomes "clogged or plugged due to the drying of the marking fluid." See col. 1, lines 20-22. The solution requires an anti-blocking additive that "has the ability to crystallize out of the solvent" so that a "liquid crystalline to solid boundary [forms] hinder[ing] the evaporation of the solvent marking fluid." See col. 2, lines 20-22; col. 3, lines 12-14. Kaufmann discloses that one anti-blocking agent can be an organic acid, including succinic acid. See col. 4, lines 43-45, 63.

*Claims 1-32*

The Examiner has rejected claims 1-32 as being unpatentable over various combinations of Pentel, Mammen, and Kaufmann.

The Examiner has used Pentel as a primary reference in combination with Mammen in rejecting claims 1-2, 4-7, 9-12, and 27-28. The Examiner identifies that Pentel lacks the teaching of (1) highlighter colorant is an acid functionalized pigment or a fluorescent colorant, (2) water or diethylene glycol as a liquid vehicle, and (3) Acid Blue 9 as a highlighter colorant.

The Examiner combines Pentel with Mammen to address the three deficiencies; specifically, the fluorescent colorant, water or diethylene glycol, and the Acid Blue 9. However, the combination of Pentel and Mammen does not teach an acid buffer having a pKa from about 2 to about 6 in combination with a highlighter colorant that is an acid-functionalized pigment or a fluorescent colorant.

Specifically, Pentel discloses a compound that is "a specific ascorbic acid derivative" in a range from 0.5 wt% to 3 wt%. Pentel never mentions for what purpose the compound is used. There is absolutely no teaching for what purpose or for what function the ascorbic acid derivative is used. The only information provided is that the purpose of the invention is to keep the pen point slightly drying. As such, Pentel does not disclose or teach the element of a compound that is formulated with a composition as a whole which acts as an acid buffer. The

10/696,344  
200315617-1

9

fact that ascorbic acid may be used as an acid buffer does not provide *prima facie* evidence that the ascorbic acid is in fact an acid buffer. In fact, since Pentel discloses an equivalent compound, magnesium salt of ascorbic acid, as an appropriate ascorbic acid derivative, which could not be used as an acid buffer, the disclosed list infers that the ascorbic acid derivative is not being used as an acid buffer.

The Examiner has previously responded to the above argument, alleging that as long as the reference contains the same chemicals, it works the same and "solves the same purpose." However, such a assertion does not represent an accurate restatement of the law in this area. In the chemical arts, a compound may function in one way in one composition and in another manner in second composition, depending on how the ingredients are put together. Specifically, in this case, the compositions do not contain the same elements for the same purposes. Second, the disclosure of a chemical in a composition must be considered in terms of the functionality of the chemical, because a chemical can be used for vastly different purposes. For example, boric acid can be used as a cross-linking agent for polymers or as a base-neutralizer. As such, if boric acid is used as a cross-linker, it is consumed during the cross-linking reaction and then cannot be used to neutralize a base. Therefore, a single chemical can be used in vastly different purposes, and such context must be taken into consideration when combining references. This is especially true in the present case, since the disclosure of Pentel is lacking, and since what is disclosed by Pentel seems to indicate that the purpose of the acid is not as a buffer. In fact, Pentel may very well use the "specific ascorbic acid derivative" as a thin crystal membrane to keep the tip from drying out, similar to the mechanism disclosed by Kaufman, please see the detailed argument below. As such, if the acid is used a thin crystal membrane, the acid leaves the solvent and becomes a solid. Such a phase change would prevent the acid from actively stabilizing the marking fluid and preventing smear.

Further, Mammen teaches away from the addition of acids. As previously discussed, Mammen explicitly states that the pH may be adjusted in an alkaline range. Thus, the Applicant contends that the combination of Pentel and Mammen with or without Kaufman is improper. A proper 103 rejection must provide a combination of references that would give a likelihood of success at achieving the present invention. In this case, Mammen could not be combined with any acid-containing highlighter ink composition, since Mammen specifically teaches away from such compositions. Specifically, Mammen states "the ink composition can further comprise a basic color stabilizer to adjust the pH and keep the pH relatively

10/696,344  
200315617-1

10

alkaline range in order to ensure that the dyes used retain their color" (underlining added). See [0102].

As the Applicant has raised the issue of teaching away, the Applicant would like to review the current case law regarding teaching away for the Examiner's convenience. The Court of Appeals for the Federal Circuit has clearly stated that "an applicant may rebut a *prima facie* case of obviousness by showing that the prior art teaches away from the claimed invention in any material respect." In re Petersen, 315 F.3d 1325, 1331 (Fed. Cir. 2003). The Court has also stated that "[w]e have noted elsewhere, as a 'useful general rule,' that references that teach away cannot serve to create a *prima facie* case of obviousness." (emphasis added) McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1354 (Fed. Cir. 2001). In identifying the appropriate standard for teaching away, the Court has further stated:

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be **discouraged from following the path set out in the reference**, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a **reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.**" (emphasis added) In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994).

In the present case, a person of ordinary skill in the art would be discouraged from adding a composition that contains acid, such as that described in Pentel, to Mammen's composition since Mammen specifically states that the pH range is adjusted in the alkaline range. Based on this explicit statement, Mammen teaches away from Pentel and Kaufmann as it would discourage a person of ordinary skill in the art to combine acid to a highlighter composition and since it requires that the pH range of the highlighter composition should be basic.

Additionally, it is worth noting that the order of the combination is not a factor in the current case law regarding teaching away. Specifically, the Applicant contends that the case law is valid regardless of whether Mammen is the primary reference or the secondary reference, as it still teaches away from allowing for the presence of acid, making the combination improper. As such, the Applicant respectfully requests that the Examiner withdraw the present rejections.

10/696,344  
200315617-1

11

The Examiner has used Pentel as a primary reference in combination with Maminen in further view of Kaufmann in rejecting claims 3 and 8. The Examiner has admitted that the combination of Pentel and Maminen does not disclose the elements that the acid buffer is succinic acid and that the colorant is an acid functionalized pigment. The Examiner has used Kaufmann to address these admitted deficiencies.

However, a close inspection of the present references reveals that the use of an acid buffer is not present in either Pentel or Kaufmann. Specifically, as discussed above, Pentel does not disclose an acid buffer but rather "a specific ascorbic acid derivative" in a range from 0.5 wt% to 3 wt%. Regardless of Pentel's lack of teaching, the combination of Pentel and Kaufmann is clearly improper since Pentel requires the use of "a specific ascorbic acid derivative." The Examiner is attempting to improperly substitute a specific ascorbic acid derivative with succinic acid. The succinic acid of Kaufmann is not a specific ascorbic acid derivative, and as such, the substitution is improper.

Furthermore, Kaufmann does not use succinic acid as an acid buffer. Even though the Examiner is attempting to use succinic acid to fulfill the acid buffer element, Kaufmann specifically states that succinic acid is an anti-blocking agent. In other words, Kaufmann describes an "antiblocking additive or solid" having an "ability to form crystals during the crystallisation [sic] process at or in, respectively, the capillary outlet opening in the solvent or solvent mixture employed" forming a "liquid crystalline to solid crystalline boundary hinder[ing] the evaporation of the solvent of the marking fluid." See col. 3, lines 3-14; col. 4, line 43. Kaufmann further states that the anti-blocking agent or solid can be "an inorganic salt, an organic acid or a derivative thereof, an amino acid or a derivative thereof, an iso cyclic, polycyclic or heterocyclic compound or a derivative thereof, a sugar or a sugar alcohol or a derivative thereof, urea or a derivative thereof or a sulfur compound." See col. 4, lines 44-50. Clearly, anti-blocking agents are not interchangeable with acid buffers since sugar alcohols, urea, cyclic compounds, inorganic salts, and amino acids cannot be used as acid buffers. The Examiner is attempting to use an anti-blocking agent as an acid buffer; however, such a use is improper as these uses are not equivalent. The mere disclosure of a compound does not establish a *prima facie* case of obviousness. The Examiner must first show that an acid buffer is present in a reference and then must show that the acid buffer can be properly combined with an additional reference. The Examiner has not shown the existence of an acid buffer in Pentel or Kaufmann. Additionally, the Examiner has not shown that Kaufmann and Pentel can be properly combined. As such, the Applicant submits that the

10/696,344  
200315617-1

12

present combination does not teach each and every element of claim 3 and respectfully requests that the Examiner withdraw the present rejection.

Additionally, the Examiner has alleged that Kaufmann discloses an acid-functionalized pigment. The Examiner cites to col. 9, lines 40-50 of Kaufmann; however, even though the passage generally mentions inks having pigments, lines 48-49 explicitly state that additional dyes may be present. As such, it is unclear if the highlighter colorant is a dye or pigment. However, even though the Applicant contends that the specific teaching of a highlighter colorant as a pigment has not been taught by Kaufmann, the Applicant notes that the claim element is an acid-functionalized pigment. Such an element is clearly not taught by Kaufmann. The Applicant directs the Examiner to the Examples which, for the most part, identify the colorant as a dye. However, the Applicant notes that even though Examples 1-4 and 6 identify the colorant as a dye and list specific dyes (including Direct Blue 199, Acid Blue 93, Solvent Red 122, and Solvent Black 3), Example 5 lists Pigment Red 112. Even so, such a disclosure, at most, teaches the use of a pigment in the highlighter composition but does not teach an acid-functionalized pigment as recited in claim 8. As such, the Applicant submits that the present combination does not teach each and every element of claim 8 and respectfully requests that the Examiner withdraw the present rejection.

The Examiner has rejected claims 13-26 and 29-32 using Mammen as the primary reference. However, these rejections only use the 3 references discussed above. As such, the Applicant renews the above arguments with respect to these claims. Specifically, the Examiner has not shown that these references, alone or in combination, teach an acid buffer, teach that the acid buffer is succinic acid, or teach that the colorant is an acid-functionalized pigment. Furthermore, the Applicants submit that the present combination of references is improper as Mammen explicitly teaches away from the use of acids.

Additionally, the Applicant would like to specifically address the rejections to claims 28, 30, and 32, where the acid buffer further includes a weak base. The Examiner has seemingly relied upon Pentel in rejecting these claims. However, as previously discussed, Pentel does not disclose an acid buffer at all. Even if the Examiner reads Pentel as disclosing an acid buffer, the listing of derivatives in the Pentel abstract indicates the compounds to be equivalent and singular. Therefore, the limited teachings of Pentel do not teach an acid buffer further including a weak base. As such, the Applicant respectfully requests withdrawal of these rejections.

10/696,344  
200315617-1

13

As the Applicant has shown that the various combinations of Pentel, Marnnen, and Kaufmann are improper and that the combination does not teach each and every element of the pending claim set, the Applicant respectfully asserts that the pending claim set is allowable. Additionally, the Applicant submits that the present combination of references does not teach the additional elements that the acid buffer further includes a weak base, that the highlighter composition contain an acid functionalized pigment, or that the acid buffer be succinic acid. Therefore, the Applicant respectfully requests that the Examiner to reconsider the pending claim set in light of the arguments presented herein.

If the Examiner has any concerns that have not been addressed, the Applicant respectfully requests a detailed explanation of those concerns; enabling the Applicant to provide an appropriate response.

10/696,344  
200315617-1

14

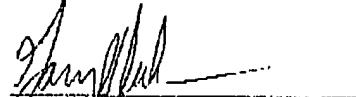
CONCLUSION

In view of the foregoing, the Applicant submits that claims 1-32 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone the undersigned attorney at (801) 566-6633 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 20<sup>th</sup> day of December, 2007.

Respectfully submitted,



Gary B. Oakeson  
Attorney for Applicant  
Registration No. 44,266

THORPE NORTH & WESTERN, LLP  
8180 South 700 East, Suite 200  
Sandy, Utah 84070  
(801) 566-6633

On Behalf Of:  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400